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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,717	03/22/2004	Oleg M. Efimov	PD-03W152	2637

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Patent Docket Administration
P.O. Box 902, Bldg. E04/MS N119
2000 E. El Segundo Boulevard
El Segundo, CA 90245-0902

EXAMINER

SHAFFER, RICKY D

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/806,717

Applicant(s)

EFIMOV ET AL.

Examiner

Ricky D. Shafer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 14-28 and 31-45 is/are pending in the application.
- 4a) Of the above claim(s) 7-9, 14-21, 26-28 and 31-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 22 and 39-45 is/are rejected.
- 7) ☒ Claim(s) 4-6 and 23-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election of Species "B", depicted by Fig. 6, in the reply filed on March 01, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 7-9, 14-21, 26-28 and 31-38 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 01, 2005.
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent ('417) in view of Van Deventer ('016) or Koyano et al ('081).

Japanese Patent ('417) discloses an optical system comprising circulator means (13) for routing a first signal from a first port (P1) to a second port (P2) and a second signal from the second port to a third port (P3), a third signal from the third port to a fourth port (P4) and a fourth signal from the fourth port to the first port; first reflective means [element (9) of amplifier (20a)] for reflecting a signal output by the second port back into the second port; and second reflective means [element (9) of amplifier (20b)] for reflecting a signal output by the fourth port back into the fourth port, note Figure 2 along with the associated description thereof, except for a

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polarization rotation element between the second port and the first reflective means and the fourth port and the second reflective means.

Van Deventer and Koyano et al each teach it is well known to use a polarization rotation element (Retarder/Rotator) between a mirror/reflector and an amplifier of a circulator port in the same field of endeavor for the purpose of suppressing noise/(unwanted signals) to improve the optical amplification of a desired signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the respective amplifier branch of Japanese Patent ('417) to include a polarization rotation element and position said polarization rotation element between the mirror/reflector and amplifier as taught by Van Deventer or Koyano et al in order to suppress noise/(unwanted signals) to improve the optical amplification of the desired signal and performance of the optical system.

5. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent ('417) in view of Zhang et al ('861).

Japanese Patent ('417) discloses an optical system comprising circulator means (13) for routing a first signal from a first port (P1) to a second port (P2) and a second signal from the second port to a third port (P3), a third signal from the third port to a fourth port (P4) and a fourth signal from the fourth port to the first port; first reflective means [element (9) of amplifier (20a)] for reflecting a signal output by the second port back into the second port; and second reflective means [element (9) of amplifier (20b)] for reflecting a signal output by the fourth port back into the fourth port, note Figure 2 along with the associated description thereof, except for means for effecting independent control of the signals output by said first and third ports.

Zhang et al teaches it is known to make mirror elements independently adjustable in the same field of endeavor for the purpose of suppressing noise (unwanted signals) and/or increasing optical coupling/transmission.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the reflective means of Japanese Patent ('417) to include independent adjusting means, as taught by Zhang et al, in order to suppress noise/(unwanted signals) and/or increasing optical coupling/transmission so as to improve the optical amplification of the desired signal and performance of the optical system.

6. Claims 1-3, 22, 39-42 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson ('202) in view of Kersey et al ('410).

Robinson discloses an optical system comprising circulator means (33) for routing a first signal from a first port (35) to a second port (37) and a second signal from the second port to a third port (39), a third signal from the third port to a fourth port (41) and a fourth signal from the fourth port to the first port; first reflective means (49) for reflecting a signal output by the second port back into the second port; and second reflective means (47) for reflecting a signal output by the fourth port back into the fourth port, note Figure 2 along with the associated description thereof, except for first and second control means for the independently adjusting the phase of the signals output from the third port and the fourth port.

Kersey et al teaches it is known to make reflective elements independently adjustable in the same field of endeavor for the purpose of obtaining a desirable output signal.

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the reflective means of Robinson to include independent adjusting means, as taught by Kersey et al, in order to obtain a desirable output signal of interest.

7. Claims 4-6 and 23-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ricky D. Shafer whose telephone number is (571) 272-2320. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RDS

May 31, 2005


RICKY D. SHAFER
PATENT EXAMINER
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